

## CLAIMS

### WE CLAIM

1. A metal halide gas generator, comprising a base, a housing having a metallic charge for reaction with a halide gas to produce a metal halide gas, said housing having a region disposed on said base, an air-tight seal comprising a polymeric material disposed between said region and said base, said region having a fluid passage for cooling said region, and a heating device to heat the metallic material to a reaction temperature.
2. The generator of claim 1 wherein said region comprises a laterally extending flange region at an end of said housing.
3. The generator of claim 1 wherein said seal comprises an O-ring seal.
4. The generator of claim 1 wherein said seal comprises an acid resistant polymeric material.
5. The generator of claim 1 including an inlet fitting on said base and outlet fitting on said housing, said inlet fitting and outlet fitting comprising zero clearance fittings.
6. The generator of claim 1 including a perforated gas distribution plate on which said metallic material is disposed, said plate being disposed in said housing downstream of said flange in the direction of flow of said halide gas in said generator.

7. A method of reducing air leakage into a metal halide gas generator, comprising providing a seal comprising a polymeric material between a housing and a base of said generator, heating a metallic charge in said housing, flowing a halide gas over said heated metallic material to effect a reaction to generate a metal halide gas, and cooling a region of said housing proximate said seal.

8. The method of claim 7 wherein said seal comprises an O-ring seal disposed between said housing and said base.

9. The method of claim 7 including connecting an inlet fitting on said base to a source of halide gas using a zero clearance fitting.

10. The method of claim 7 including connecting an outlet fitting on said housing to an outlet conduit using a zero clearance fitting.

11. The method of claim 7 wherein said metallic charge is disposed on a perforated gas distribution plate disposed in said housing downstream of said seal.